BONNEVILLE POWER ADMINISTRATION

Wind River Watershed Restoration Project

Underwood Conservation District

Annual Report 2004 - 2005 | September 2005 | DOE/BP-00005480-3

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Bonneville Power Administration
P.O. Box 3621
Portland, OR 97208

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Wind River Watershed Restoration

2004-2005 Annual Report
for the period July 1, 2004 to June 30, 2005

August 2005

Prepared by:

Tova Cochrane
Jim White
Underwood Conservation District
170 NW Lincoln Street
P.O. Box 96
White Salmon, WA 98672
509-493-1936

Prepared for:

Bonneville Power Administration
Environment, Fish and Wildlife
P.O. Box 3621
Portland, OR 97208-3621

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Introduction

The goal of the Wind River project is to preserve, protect and restore Wind River steelhead. In March, 1998, the National Marine Fisheries Service listed the steelhead of the lower Columbia as "threatened" under the Endangered Species Act. In 1997, the Washington Department of Fish and Wildlife rated the status of the Wind River summer run steelhead as critical. Due to the status of this stock, the Wind River summer steelhead have the highest priority for recovery and restoration in the state of Washington's Lower Columbia Steelhead Conservation Initiative.

The Wind River Project includes four cooperating agencies. Those are the Underwood Conservation District (UCD), United States Geological Survey (USGS), US Forest Service (USFS), and Washington State Department of Fish & Wildlife (WDFW). Tasks include monitoring steelhead populations (USGS and WDFW), Coordinating a Watershed Committee and Technical Advisory Group (UCD), evaluating physical habitat conditions (USFS and UCD), assessing watershed health (all), reducing road sediments sources (USFS), rehabilitating riparian corridors, floodplains, and channel geometry (UCD, USFS), evaluate removal of Hemlock Dam (USFS), and promote local watershed stewardship (UCD, USFS).

UCD's major efforts have included coordination of the Wind River Watershed Council and the Wind River/White Salmon Technical Advisory Committee (TAC); water temperature monitoring; riparian habitat improvement projects, and educational activities. Our coordination work enables the local Watershed Committee and TAC to function and provide essential input to Agencies, and our habitat improvement work focuses on riparian revegetation. Water chemistry and temperature data collection provide information for monitoring watershed conditions and fish habitat, and are comparable with data gathered in previous years. Water chemistry information collected on Trout Creek has, with the 2 years of data we collected, helped determine whether pH levels make conditions favorable for a fish parasite, *Heteropolaria lwoffi*. Educational activities further the likelihood that future generations will continue to understand and enjoy the presence of native fish stocks in the Wind River basin.

Objective 1: Coordination – Coordinate watershed stakeholders in order to guide the implementation of watershed restoration actions that are consistent with stakeholder objectives.

<u>Task 1a:</u> **Facilitate monthly meetings and operations of the Wind River Watershed Council (WRWC).**

Specific actions included:

a) Ten WRWC meetings were held during this performance period, all ten facilitated by UCD. The WRWC hosted a large variety of informational topics, including:

- A review and discussion of the draft Wind River sub-basin plan that entailed submitting comments.
- The Carson area Stormwater Runoff Plan presented by Skamania County Public Works, informing us of the major concerns associated with water quality and stormwater in the area.

- A "Firewise" presentation by Skamania County WSU Extension staff, helping people learn how to protect their property from loss to wildfire.

- A presentation on the Wind River EDT Analysis by WDFW.

- An Open House designed to bring in new members and allow the Wind River Middle School students to present their findings from water chemistry sampling on the Wind River and Carson Creek.

b) The WRWC chair represented the WRWC at Water Resource Inventory Area 29 (WRIA) Planning Unit meetings.

c) UCD presented several updates to the WRWC on the high priority project on the middle Wind River (environmental analysis and habitat improvement) and other projects developing from the Watershed Enhancement Project (WEP) list. The middle Wind project was submitted for grants through the US Forest Service, and another habitat analysis project on the Little Wind was proposed to the Salmon Recovery Funding Board.

Task 1b: **Facilitate quarterly meetings and operations of the TAC.**
Specific actions included:

a) Four meetings of the Wind River/White Salmon Technical Advisory Committee (TAC) were held during the period. The meetings afford an opportunity for sharing of work information and progress in areas such as Hemlock Dam EIS status (USFS), Hatchery operations (Spring Creek and Carson National Fish Hatcheries), and Fish habitat and population studies (USGS, Columbia River Research Lab). UCD presented potential projects, including two subsequently submitted for grants.

b) Familiarization with the EDT Analysis: the TAC did not address the EDT analysis, but did review and comment on the Wind River sub-basin plan (item d below), a product that incorporated EDT.

c) Support TAC by assisting project sponsors to develop project proposals: The TAC advised UCD on what water quality parameters to sample in the coming year, resulting in the development of the low-nutrient sampling project mentioned later in the this report.

d) Serving as a liaison between other groups: The TAC reviewed the Wind River TMDL Detailed Implementation Plan, giving feedback to Dept. of Ecology. TAC also reviewed the draft Wind River sub-basin plan and submitted comments.

Objective 2: <u>Monitoring</u> – Monitor physical habitat conditions, water quality and natural production of juvenile, smolt and adult steelhead in the Wind River sub-basin.

<u>Task 2a:</u> **Monitor temperature at established baseline stations to monitor status of Wind River Temperature TMDL. Monitoring will be conducted at 10 stations within the basin, using Onset HOBO and Stowaway units.**
Specific actions included:

a) Continuous summer water temperature monitoring was completed with 6 HOBO® temp loggers and 4 Stowaway loggers. Ten (nine sites and one duplicate) loggers were launched in May 2004. Refer to the map in the Appendix to see the location of these sites. The Hobos were checked periodically during the summer, to ensure they were not out of water, as stream levels fell during the dry season. Only eight loggers were retrieved from seven sites in October 2004, and the data were downloaded. The other two loggers appeared to have been lost. In May 2005 one of the "lost" loggers was found. The data have been forwarded to USGS for analysis, and will be shared with project partners, DOE, and the US Forest Service (USFS). Refer to the Appendix for a summary of the temperature results. In spring of 2005, data logger accuracy was checked against a National Institute of Standards and Technology (NIST) thermometer. In May 2005, after refurbishing and replacing some of the loggers, ten loggers were launched again throughout the Wind River watershed. This time 3 loggers are Hobos and 7 loggers are Stowaways. We have been checking them through the summer to ensure they are underwater as the stream levels drop. Several graphs of temperature data are located in Appendix.

b) UCD did not participate in discretionary water quality monitoring with USGS due to the unavailability of our technician (maternity leave).

c) Water quality data from the 2002-2003 pH monitoring in Trout Creek was synthesized and included in the BPA 2003-2004 report, Appendix A. Our water quality database is continuing to be developed as time allows. This database will help facilitate easy access and reports.

We are working with our project partners to determine future water quality sampling needs for which UCD would be the logical organization to conduct. In the BPA contract for 2005-2006, UCD will be cooperating with USGS on low-nutrient sampling throughout the Wind River watershed.

Objective 3: <u>Assessment</u> – Use a science-based framework to assess the condition of the watershed to determine what factors prevent stakeholder objectives from being met and to prioritize actions that result in meeting those objectives.

<u>Task 3a:</u> **Update assessment data, revise list of needed projects, and prioritize the list based on value and likely success of desired outcomes.**

- In 2004-5, UCD continued to review and update the Wind River Watershed Enhancement Project (WEP) list. The project status was updated, and entered into GIS from hand maps.

- In Spring 2005, the Lower Columbia Fish Recovery Board released criteria for Salmon Recovery Funding grant applications. These criteria, which utilize EDT and information from fish biologists, is helping the WRWC and UCD to better focus on basin projects with high priority for fish. In July 2005, UCD resubmitted a grant proposal to the Salmon Recovery Funding Board that would study the fish habitat of the Little Wind River, an important reach according to the EDT.

- Throughout 2004 and 2005 UCD continued to plan and design a restoration project in the Middle Wind on the Price and Misner/Hollis properties, south of Beaver Campground. Several site visits with our cluster engineer, Paul Cleary, and USFS fish biologist, Brian Bair, produced a preliminary design plan for stabilizing streambanks, increasing channel stability and improving fish habitat. UCD is working with USFS on preparing a Title II grant for funding. This grant is designed to cover the costs of planning and partial implementation of the design. The preliminary design plan showed a much larger project than originally planned for in the USFS grant, so in Spring of 2004 UCD applied for a second Title II grant that should cover the costs of implementation of the entire design plan. If this second Title II grant is funded, UCD will leverage with BPA funds to complete the entire project.

Objective 4: <u>Restoration</u> – Restore stream habitats, riparian zones, water quality and watershed processes that will support self-sustaining populations of steelhead.

Place key pieces of LWD to achieve the range of natural variability for the Wind River watershed (75-120 pieces/mile), and plant and thin riparian forest to increase stream shade, provide future LWD and channel stability.

Specific actions included:

a) *Middle Wind River Reach -- Stabler Cut-bank Stabilization Project*, north of Stabler. The channel stabilization work continues to look good. In spring 2005, UCD planted trees and other riparian vegetation on the site (see subtask C below).

b) *Middle Wind River Reach -- Jursik Property Reforestation Project*, north of Stabler. UCD revisited this site, primarily to check on the cut-bank along the Wind River. The 2003 plantings were doing well. Jim White didn't recommend any further reforestation needs for the property. There is some Scotch Broom throughout the property and along the Wind River, and it may have potential for removal and replanting.

c) *Middle Wind River Reach -- Sandberg Property Reforestation Project*, north of Stabler. UCD continued work with landowner John Sandberg in reforesting the river bank on his property. Approximately 650 seedlings (Douglas-fir, grand fir, black cottonwood, and red-osier dogwood) were planted on March 19, 2005 by Wind River Watershed Council volunteers, UCD staff, and the Mid-Columbia Fisheries Enhancement Group, totaling to nearly 5 acres planted. Landowner John Sandberg watered trees subsequent to planting. Early indications are that the trees survived very well, with moderate success for the shrubs planted along the river edge. For one day in March 2005, UCD hired the Northwest Service Academy to continue work on scotch broom removal on this property. Approximately 3.5 acres of Scotch Broom were cut by the NWSA Americorps crew and UCD staff. The landowner piled and burned the resulting slash on-site.

d) *Middle Wind River Reach -- Price Properties Reforestation Project*, south of Beaver Campground. The NWSA Americorps crew planted 640 seedlings on an estimated 5 acres of the Price and Misner/Hollis properties in March of 2004: 125 Douglas fir, 75 Grand fir, 10 Red Osier Dogwood, 10 Douglas Spirea, 20 Bitter Cherry, 50 Western Red Cedar, and 350 Black Cottonwood. The Western Red Cedar were protected from elk browse by being caged in chicken-wire. Of the 50 cedar planted, 16 were soon pulled up by elk, despite the effort to protect them. Early visits showed very good survival of trees, but we'll know better at the end of the growing season. Approximately 13 acres of Scotch Broom were cut along the Wind River on these properties as well in the Spring of 2004 by the NWSA crew. This work is in preparation of the restoration project being planned through this stretch of the Wind.

e) *Lower Wind River Reach, Little Wind River Fisheries Enhancement Project*. We visited the lower Little Wind with engineer Paul Cleary in spring 2004. We identified active slumping activity, and did outline some areas on an old road that could use water bars. In the course of discussions with landowner Dan Gundersen, we determined that the best course would be to do a larger assessment of conditions and fish habitat needs on the lower Little Wind. We will work on that task in our 2005-2006 performance period, hopefully with the help of a SRFB grant that we applied for in summer of 2005. In Spring of 2005, the NWSA crew planted 50 Western Red Cedar on approximately 1 acre of steep slope above the Little Wind River. This slope is quite open, thinly covered by Red Alder and susceptible to landslides. The cedars were bare-root seedlings. We protected the seedlings with chicken-wire fencing held by wooden stakes. Two weeks later it was observed that a small mudslide had occurred at the planting site and at least 15 of the 50 trees had been covered by mud. UCD staff revisited the area to assess the damage and planted 150 Black Cottonwood stakes on the slope. This project will require some long-term monitoring and maintenance, especially as the trees grow out of the chicken-wire cages. It is our

hope that the root systems of the Western Red Cedar and Black Cottonwoods will help stabilize the slopes above the Little Wind River, thus preventing further erosion and sedimentation of the stream.

Objective 5: <u>Education</u> – Promote watershed stewardship among students, the community, private landowners and local governments.

<u>Task 5a</u>: Support the Wind River Middle School's environmental education program.

Supporting environmental education in the local schools is an important way to maintain the goals and operations of the WRWC in the future. The two fish chillers purchased by UCD continue to be used by Carson Elementary School. The chillers are kept by one of our partners, the US Fish and Wildlife Service's (USFWS) Columbia Gorge Information/Education Office. The Information/Education Office primarily uses them in educational efforts in Stevenson and Carson.

Specific actions included:

a) *Wind River Middle School Outdoor Education.* UCD partnered with USFWS, US Army Corps of Engineers, and local volunteers to assist the 7th grade outdoor education class in learning about water quality monitoring. UCD helped develop in-class lessons, field trips, and on-site monitoring lessons. The ~20 students per trimester learned about various water quality parameters, how to test for them, as well as their significance to human and environmental health. Students monitored the water quality in the lower Wind River and Carson Creek throughout their trimesters. Two of the three trimesters also created presentations demonstrating their findings. These presentations were executed at a WRWC meeting and Open House. The students in the Spring trimester also participated in the Kanaka Creek Adopt-A-Stream field trip. Fieldwork accomplished included tree planting, water quality measurements, and macro-invertebrate identification. Also assisting in this field trip were the USFWS Education/Outreach Office, the US Army Corps of Engineers, Port of Stevenson, and local volunteers.

<u>Task 5b</u>: Distribute informational brochures, submit articles to local paper, and conduct community volunteer events to inform public about watershed issues, activities, and opportunities for involvement.

Specific actions included:

a) *Arbor Day:* UCD held an Arbor Day tree giveaway in Stevenson on April 13th, 2005. 1,000 Trees were distributed to individuals throughout the day along with information on the tree species and planting instructions. A press release preceded the Arbor Day event and a sandwich board on-site attracted a lot of traffic. This effort was successful, though to be more effective in the education, we should have more staff or volunteers on-site to communicate tree information to the public.

b) *Skamania County Fair:* UCD created a display and staffed an informational booth for all 4 days of the Skamania County Fair in

Stevenson in August, 2004. Part of the display was a stream table that we borrowed from the Vancouver Water Center. This apparatus was quite effective in attracting children and their parents to the display. We were able to demonstrate some interesting stream dynamics with the table, but we decided that, overall, it turned into more of an entertainment/daycare type of tool than an educational one. Many parents observed the Stream Table as their children played, and we made about 30 contacts to whom we spoke with about the District and its programs. 9 People signed our Information Sign-up Sheet.

c) *Plant ID workshop:* UCD was unable to execute a plant ID workshop in the summer of 2004. Many other tasks filled up our time, and weekends were not open for staff. A plant ID workshop did take place in the White Salmon watershed in September 2004 that was open to anyone, including those living in the Wind River area. UCD has scheduled a plant ID workshop to take place in the Wind River Watershed the summer of 2005.

d) Other activities included:

- *WRWC Open House:* In March 2005 the WRWC held an Open House at the Wind River Middle School to invite new members to join the council, inform the public about our activities, and allow the middle school students to present their water quality testing results from Carson Creek and the Wind River. Information was displayed by USFS Gifford Pinchot National Forest (Hemlock Dam status), USGS Columbia River Research Laboratory (fish studies on the Wind), Skamania County Planning (WRIA 29 status and Eurasian Milfoil status), Skamania County Noxious Weed Board (knotweed status), Skamania County Health Dept. (Septic maintenance), and USFWS Carson Fish Hatchery.

- *"Firewise" Presentations:* Skamania County WSU Extension staff provided 2 "Firewise" presentations to the WRWC and general public, helping people learn how to protect their property and natural resources from loss to wildfire.

- *Stabler Community Council:* UCD, in partnership with Mid-Columbia Fisheries Enhancement Group, presented information regarding WRWC activities to approximately 30 residents of the Stabler community at one of their Council meetings in March 2005. This entailed a slideshow and a description of the resources available to landowners via UCD. We answered questions and distributed brochures and business cards.

<u>Task 5c</u>: Provide technical assistance to landowners and agency personnel to develop water resource mitigation measures for projects on watershed lands.

Planned actions included:

a) Assist basin landowners with the development of forest stewardship plans or revegetation/erosion control plans covering their property in the Wind River

drainage. During the performance period, UCD provided assistance to landowners John Sandberg, Price Properties Trust, Cliff and Rena Hollis, Dan and Lynn Griffith, Tim and Telina Thompson, Matt Schroeder, Michael Klinger, Dan Gundersen, and Glen Ritchie in the form of technical assistance and direct implementation (i.e. planting). None of the above landowners requested a forest stewardship plan, though some did have revegetation or erosion control questions. UCD wrote up summary reports for site visits. In addition, UCD made 30 contacts with landowners at the Skamania County Fair, dispensing information and advice. UCD is continuing planning of projects with USFS, Hollis, Sandberg, Griffith, Schroeder, and Gundersen.

Objective 6: <u>Administration</u> – Provide administrative support to the above tasks for UCD.

The above tasks were supported throughout the year by administrative actions such as: budget preparation, voucher preparation, working with COTR to comply with BPA reporting requirements, attending BPA meetings and reading BPA reports to keep up-to-date with accounting changes and reporting requirements for BPA contracts, tracking expenditures during both UCD Performance Period and BPA fiscal years, and assistance with preparation of reports to BPA.

<u>Report: Budget Summary</u>

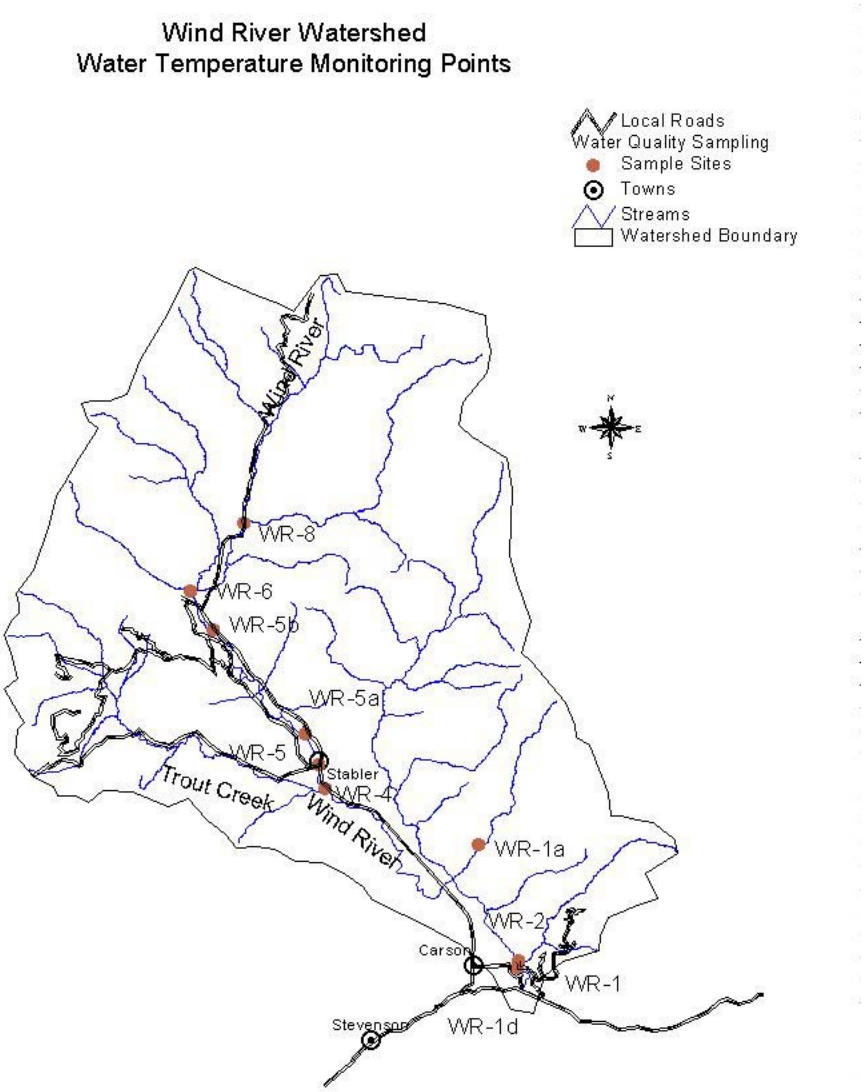
Expenditures by Category:

Underwood Conservation District
Wind River Watershed Project
BPA Project No. 1998-019-00
July 1, 2004- June 30, 2005

<u>Category</u>	**<u>Expended</u>**	**<u>Unexpended</u>**
Personnel:	46,323.82	973.18
Supplies:	2,329.84	1,325.16
Overhead:	5,540.54	891.46
Travel:	1,241.10	258.90
Subcontractors:	10,940.75	(2,220.75)
Other:	-	-
<u>Total:</u>	<u>66,376.05</u>	<u>1,227.95</u>

Appendix: Wind River Continuous Temperature Monitoring Summary

Figure 1:



The red dots (sample sites) indicate the locations of our continuous temperature loggers.

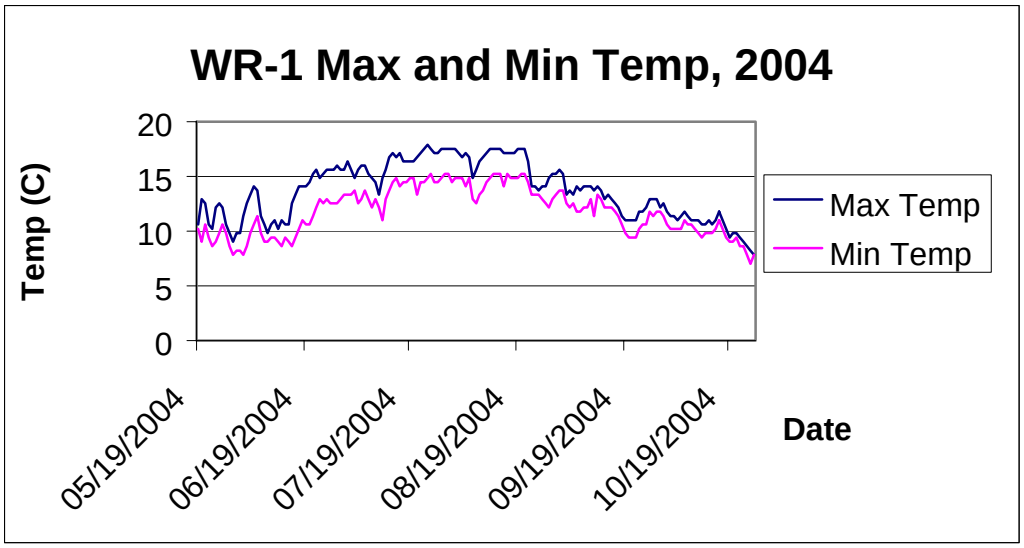


Figure 2: WR-1, at the base of the Wind River.

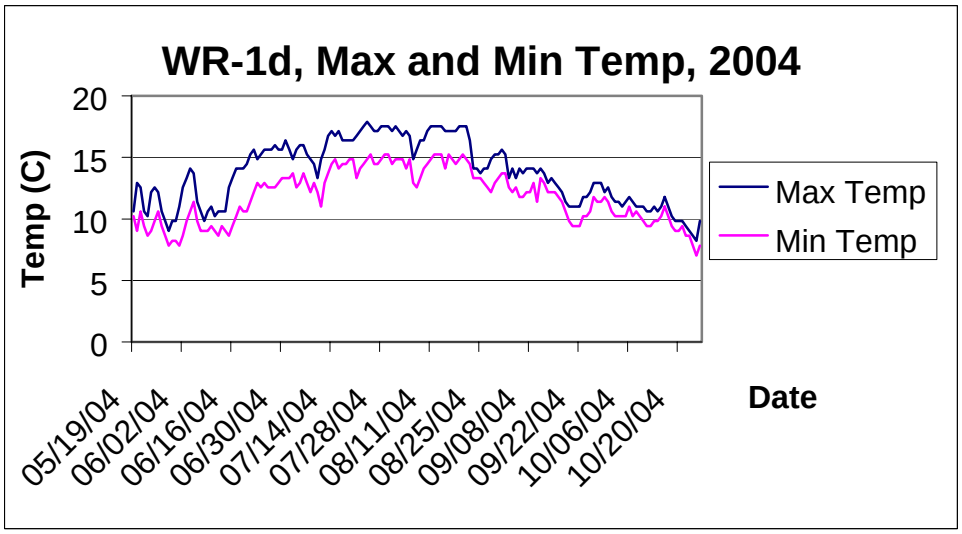


Figure 3: WR-1d is the duplicate for WR-1. The measurements were very similar.

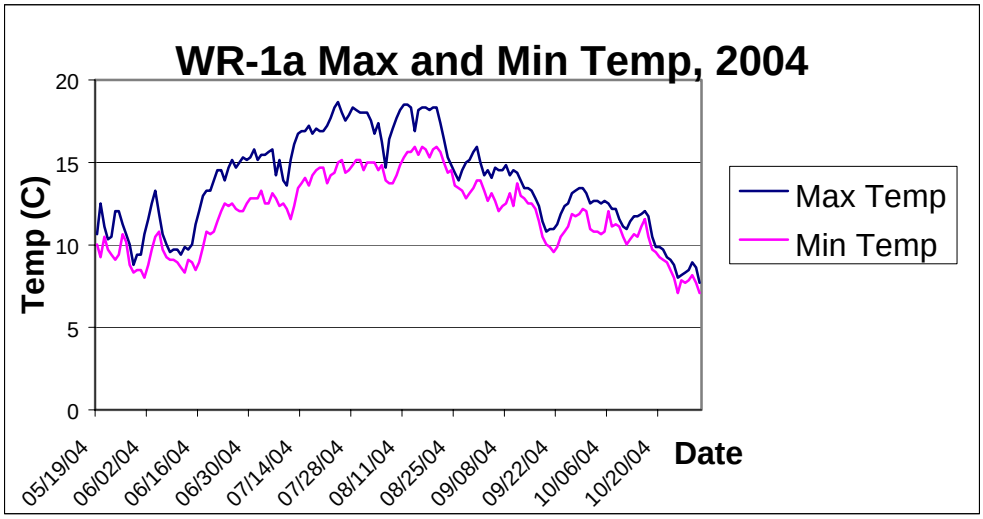


Figure 4: WR-1a, Bear Creek at USFS boundary, reached over 18^{o} C for 18 days in the hottest part of the summer. This represents the longest, warmest recorded temperatures for this site since we started monitoring. Bear Creek reached over 18^{o} C for five days in 2003 and relatively few days in previous years.

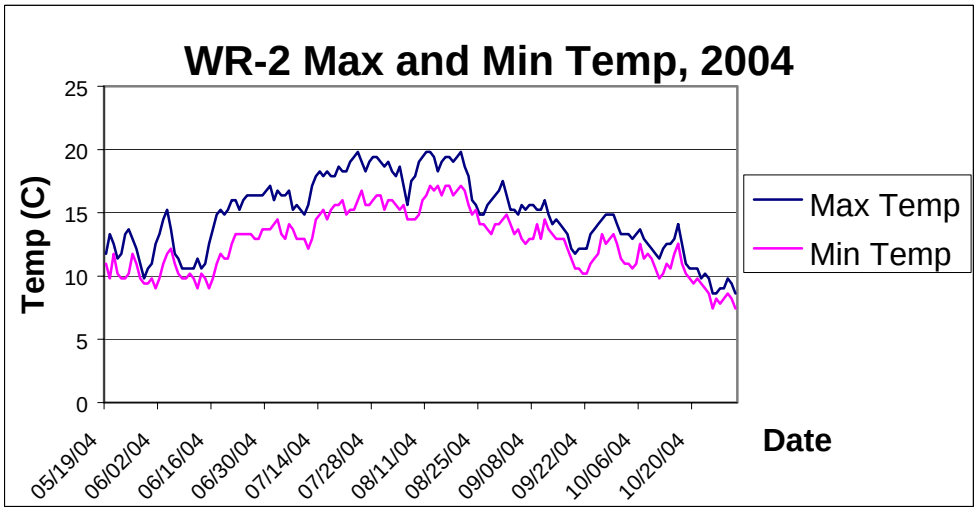


Figure 5: WR-2, the base of the Little Wind River.

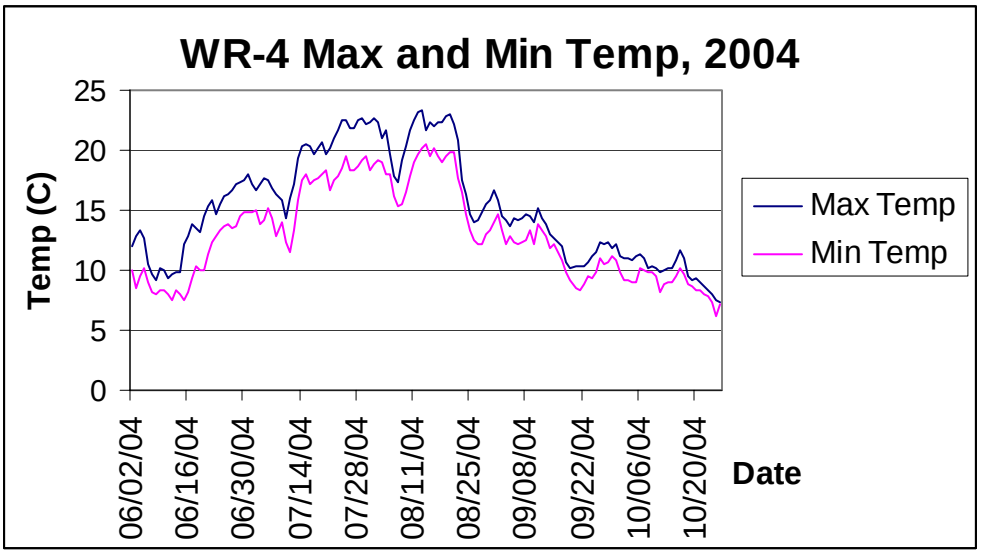


Figure 6: WR-4, the base of Trout Creek, has always had several days above 18° C in years past, though 2004 showed an increase in the number of days over 18° C.

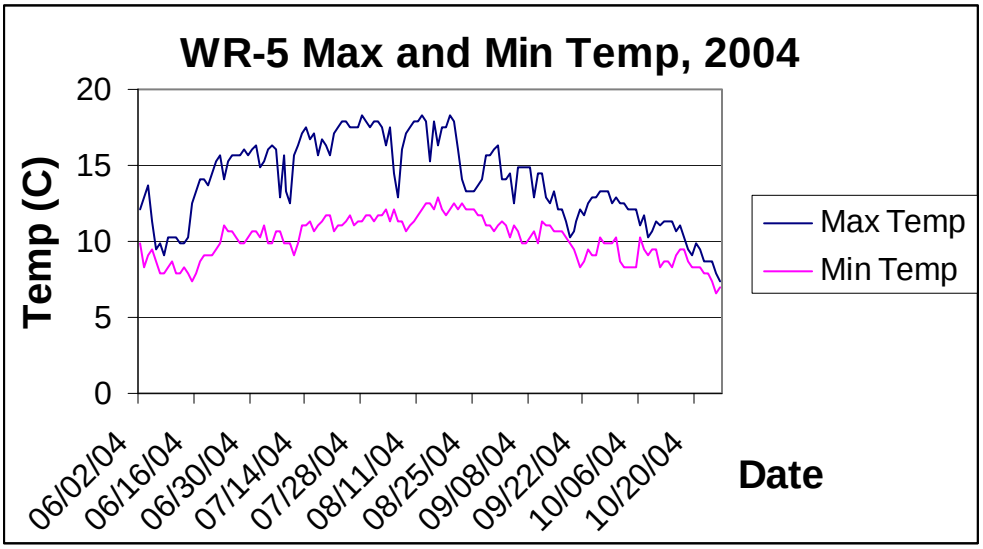


Figure 7: WR-5, the Middle Wind at Stabler Bridge, stayed relatively cool in 2004.

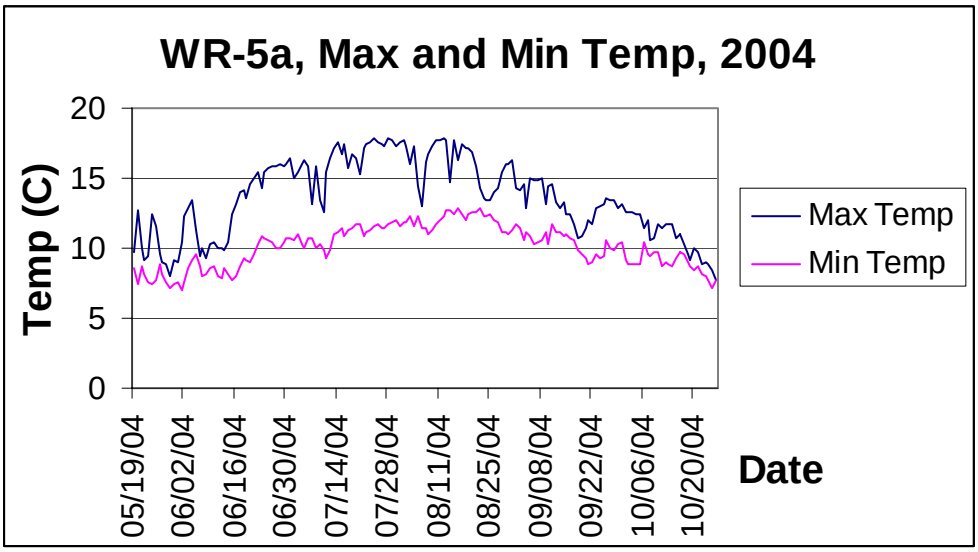


Figure 8: WR-5a, Middle Wind at the Pacific Crest Trail, stayed relatively cool this year. The only time UCD has recorded this site exceeding 18^{o} C was in 2003.

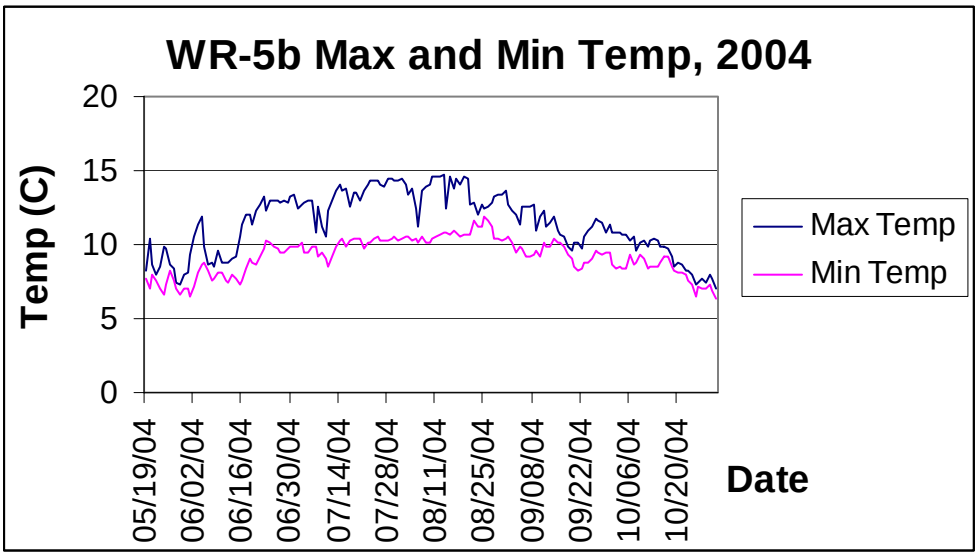


Figure 9: WR-5b, Middle Wind at Beaver Campground, has stayed quite cool over the years. UCD has no record of this site exceeding 18^{o} C. It is evident that temperatures further upstream are cooler than sites lower down in the watershed.

Logger for WR-6, Trapper Creek, was lost or stolen, and no data were recovered.

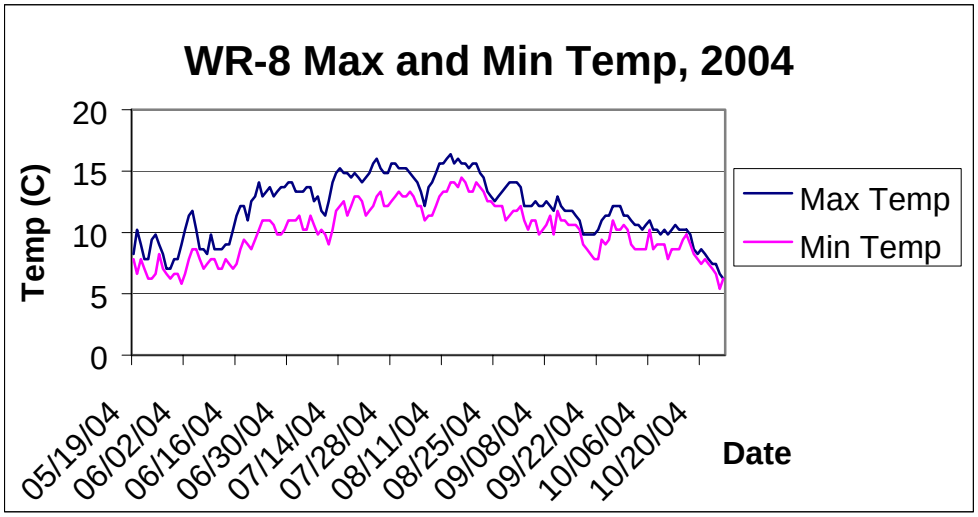


Figure 10: WR-8, Upper Wind River, below Falls Creek, also stayed below 18^{o} C this year. UCD has recorded this site as exceeding 18^{o} C for several days in 2002, but has otherwise not shown a temperature problem.